Add A17

CLAIM 1. Procedure for attaching a headrest-tube to an elongate seatframe-piece of an automobile seat, including:

providing the seatframe-piece in a configuration comprising a web, having an upper side and a lower side;

providing a through-hole in the web of the seatframe-piece, the headrest-tube being a clearance fit in the through-hole;

making a sub-assembly by placing the headrest-tube in the through-hole in the top-rail;

providing a die-set, and arranging the sub-assembly in the die-set;

providing the headrest-tube with a first shoulder, which lies in contact with a first side of the web of the seatframe-piece over an annular margin of the first side of the web surrounding the through-hole;

pressing the headrest tube axially, in the die-set, in such manner as to expand the headrest-tube diametrally, at least over a region of the headrest-tube adjacent to the other side of the web, thereby forming a second shoulder of the headrest-tube;

wherein the second shoulder lies in contact with the other side of the web of the seatframe-piece, over an annular margin of the other side of the web, surrounding the through-hole;

pressing the axially on the first and second shoulders, with sufficient force to coin the first and second shoulders together, onto the two sides of the web;

taking the sub-assembly out of the die-set, leaving the web of the seatframe-piece gripped between the first and second shoulders of the headrest-tube.

CLAIM 1. Procedure for attaching a headrest-tube to an elongate seatframe-piece of an automobile seat, including:

providing the seatframe-piece in a configuration comprising a web, having an upper side and a lower side;

providing a through-hole in the web of the seatframe-piece, the headrest-tube being a clearance fit in the through-hole;

making a sub-assembly by placing the headrest-tube in the through-hole in the top-rail;

providing a die-set, and arranging the sub-assembly in the die-set;

providing the headrest-tube with a first shoulder, which lies in contact with a first side of the web of the seatframe-piece over an annular margin of the first side of the web surrounding the through-hole;

pressing the headrest tube axially, in the die-set, in such manner as to expand the headrest-tube diametrally, at least over a region of the headrest-tube adjacent to the other side of the web, thereby forming a second shoulder of the headrest-tube;

wherein the second shoulder lies in contact with the other side of the web of the seatframe-piece, over an annular margin of the other side of the web, surrounding the through-hole;

pressing the axially on the first and second shoulders, with sufficient force to coin the first and second shoulders together, onto the two sides of the web;

taking the sub-assembly out of the die-set, leaving the web of the seatframe-piece gripped between the first and second shoulders of the headrest-tube.

Abstract of the Disclosure

Title: SECUREMENT OF HEAD REST SUPPORT INTO AUTOMOBILE SEAT FRAME

The headrest support tubes are secured to the seat frame member not by the usual welding, but by gripping the web of the member between two rings or lock-beads swaged into the metal of the tube. The first ring is swaged-out by compressing the tube. The tube, with the one ring, is then assembled into a through-hole in the web of the frame member. Then, the second ring is swaged into the metal of the tube, on the other side of the web, and the web lies gripped between the rings. The seat frame member may be an I-section extrusion, or a round tube with localised squeezed-flat areas, flanked by flanges.

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